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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/856,296	07/13/2001	Tsutomu Minami	2001-0631A	6695

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WENDEROTH, LIND & PONACK, L.L.P.
2033 K STREET N. W.
SUITE 800
WASHINGTON, DC 20006-1021

EXAMINER	
JOHNSON, EDWARD M	

ART UNIT	PAPER NUMBER
1754	

DATE MAILED: 05/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/856,296	MINAMI ET AL.	
	Examiner	Art Unit	
	Edward M. Johnson	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 February 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1 and 4-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Remy US 6,224,884.

Regarding claim 1, Remy '884 discloses a process for producing titanium oxide comprising hydrolyzing a titanium compound (see column 3, lines 1-38) and heating the mixture, which contains water (see column 3, lines 30-31) at 80-100 degrees Celsius followed by drying (see column 3, lines 39-46), to produce anatase titania (see column 3, lines 54-59).

Regarding claim 4, Remy '884 discloses synthesis from titanium alkoxide (see column 10, lines 55-56).

Regarding claims 5-6, Remy '884 discloses heating the mixture, which contains water (see column 3, lines 30-31) at 80-100 degrees Celsius to produce iron doped titanium oxide (see Example 1).

5. Claims 8-9 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Remy '884.

Regarding claims 8-9, Remy '884 discloses a composition containing the produced anatase titania to produce a film (see abstract and column 5, lines 60-64).

6. Claims 1-9 are rejected under 35 U.S.C. 102(a) as being anticipated by Tada et al. WO98/27021 (translated in US 6,379,776).

Regarding claim 1, Tada '776 discloses a method for making titania (see column 2, lines 48-50) comprising hydrolyzing a titanium compound (see column 6, lines 47-65 and Embodiments 2-3), and further reacting with water at 10 degrees Celsius to boiling point to form an anatase titania coating (see column 8, lines 28-38 and column 14, lines 39-45).

Regarding claims 2-4, Tada '776 discloses titanium tetraisopropoxide (see column 14, lines 25-32).

Regarding claim 5, Tada '776 discloses further reacting with water at 10 degrees Celsius to boiling point.

Regarding claim 6-7, Tada '776 discloses doping with a fluorine compound (see column 5, lines 6-17) to produce a photocatalytic film (see column 4, lines 29-30).

7. Claims 8-9 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Tada '776.

Regarding claims 8-9, Tada '776 discloses an anatase titania coating (see column 8, lines 28-38 and column 14, lines 39-45) and a photocatalytic film (see column 4, lines 29-30).

8. In the event any differences can be shown for the product of the product-by-process claims 8-9, as opposed to the product taught by Remy '884 and/or Tada '776, such differences would have been obvious to one of ordinary skill in the art at the time the invention was made as a routine modification of the product in the absence of a showing of unexpected results; see also In re Thorpe, 227 USPQ 964 (Fed.Cir. 1985).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the

> art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 2-3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Remy '884.

Remy '884 fails to specifically disclose the organic polymer in the solution and forming the gel film on the substrate.

Regarding claims 2-3, it is considered that it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a water-soluble organic polymer into the solution in the process of Remy '884 because Remy '884 discloses incorporation of an organic polymer (see column 5, lines 13-29) when the composition is in aqueous form or solution (see column 4, lines 35-39).

Regarding claim 7, it is considered that it would have been obvious to one of ordinary skill in the art at the time the invention was made to form a gel film on a substrate to produce a film in the process of Remy '884 because Remy '884 discloses forming a film and solubility on a support (see column 4, lines 28-37 and column 5, lines 60-64).

Response to Arguments

Applicant's arguments filed 2/12/04 have been fully considered but they are not persuasive.

It is argued that on the other hand, the present invention... react with water. This is not persuasive because Remy discloses heating the mixture, which contains water (see column 3, lines 30-31) at 80-100 degrees Celsius; and Tada discloses further reacting with water at 10 degrees Celsius to boiling point to form an anatase titania coating (see column 8, lines 28-38 and column 14, lines 39-45). Since Applicant claims a process using open language, prior art disclosing additional steps having higher temperatures is not specifically excluded, as Applicant appears to suggest.

It is argued that the organic polymer added... anatase crystalline phase. This is not persuasive because it is considered that it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a water-soluble organic polymer into the solution in the process of Remy '884 because Remy '884 discloses incorporation of an organic polymer (see column 5, lines 13-29) when the composition is in aqueous form or solution (see column 4, lines 35-39).

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward M. Johnson whose telephone number is 571-272-1352. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman can be reached on 571-272-1358. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-0987.

EMJ
May 15, 2004

EY S. SILVERMAN
ORY PATENT EXAMINER
OLOGY CENTER 1700